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The position of Wollaston's system appears, therefore, to be nearly identical with that of the variable T *Coronæ*. If we could rely upon Wollaston's observation it would be a most interesting speculation, whether the late intense brightness of T *Coronæ* was not due to the falling of one or more of the components of this system into the central sun. However, on referring to Wollaston's authority, Herschel,* we find as follows:—

"Double. About 1 degree S. following ε, in a line parallel to θ and ε *Coronæ*; the preceding of three forming an arch. Extremely unequal. r. l.; s. darker r. Distance 41″ 12‴. Position 16°·0′ S. following."

If we take Sir W. Herschel's description of the position of his double star, viz. "1 degree S. following, in a line parallel to θ and ε *Coronæ*," we shall find that the star 2767 of Argelander's Zone + 26° agrees very closely with Sir W. Herschel's description of place. This star is also "the preceding of three forming an arch." It is double: the relative positions of the components agree closely with those assigned by Herschel. I believe, therefore, that this is Herschel's system.

This paper of Sir W. Herschel's was read before the Royal Society, December 9, 1784. Wollaston's Catalogue was published 1789.

I am unable to find any authority for Wollaston's statement that the system is really quadruple. Wollaston's optical means were hardly sufficient to supply omissions on the part of Sir W. Herschel. I cannot help thinking, therefore, that we have unfortunately some confusion or mistake on Wollaston's part, with reference to this observation, and that the ground is too unsafe for speculation.

A Description of some Apparatus employed in the Adjustment of Sextants. By William Simms, Esq.

Considering that the adjustment of the Sextant has lately occupied the attention of some of the Members of the Royal Astronomical Society, I beg to present a short statement of what has been attempted by myself in this direction.

Several years since, in consequence of a prolonged absence of clear weather, I was compelled to direct my attention towards finding some substitute for the Sun's disk in effecting the various adjustments of the instrument.

For the purpose of obtaining the index error, and adjusting the dark shades, I temporarily fitted up a telescope of about 2½

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* Hers. v. 75, July 18, 1782, *Phil. Trans.* 1785, p. 109.

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inches aperture, preferring this to a pair of telescopes, for the reason that the distance between the centre of the index-glass and the axis of the telescope varies greatly in different instruments; in the focus of the object-glass there was fixed an opaque diaphragm, with a clean circular aperture subtending an angle of ½ degree approximately, thus representing, when viewed through the sextant telescope, an image of the Sun; it is evident that the object-glass must be perfectly corrected for spherical aberration, and that the diaphragm must be carefully adjusted to the focus of parallel rays.

I had contemplated the employment of a pair of small telescopes with their optical axes parallel, but seeing that the apertures must be sufficiently large to allow of sextants which differ in the distance between the telescope and the index-glass being brought to view them, and that the parallelism must be adjusted by another instrument, I determined to adopt the single object-glass of large aperture.

I found no difficulty in adjusting the lighter shades, but the darkest baffled me at that time. I think that, with some of the intense lights now available, a sufficient degree of illumination might be obtained to correct the darkest shades of the sextant. The return of bright weather and less pressure of business induced me to lay aside my contrivance, and to look again to the Sun; and I should, if possessing the most perfect collimating apparatus, prefer this luminary for obtaining both index-error and errors of the shades.

Now I have another contrivance to describe, which I have found so useful that I have retained it ever since it was fitted up. This consists of two small telescopes, fixed at an angle of 90 degrees upon an arc of cast-iron, which is set up vertically, being held at the centre of gravity to avoid any strain from expansion; the diaphragm in the focus of each object-glass is an opaque one, with a circular aperture of ½ degree, as before described, and the observation is effected by making contacts on both sides of the images precisely as when observing two images of the Sun; this gives a very convenient and accurate means of setting the optical axis of the sextant telescope parallel to the limb; and having ascertained by observation with a Troughton reflecting circle the true angle subtended by the collimating telescopes, I have at the same time the error of the arc of the sextant for 90 degrees, and a check upon the centering of the instrument.

Charlton, Nov. 6, 1866.

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